DOCUMENT RESUME

ED 282 655 PS 016 633

AUTHOR Kramer, Deirdre A.; And Others
TITLE Age-Relevance of Content Material on Relativistic and Dialectical Reasoning.
PUB DATE May 87
NOTE 20p.; Paper presented at the Annual Symposium of the Jean Piaget Society (17th, Philadelphia, PA, May 28-30, 1987).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Adolescents; Age Differences; *Cognitive Ability; Cognitive Development; *Middle Aged Adults; *Older Adults; Performance Factors; Problem Solving; *Young Adults
IDENTIFIERS Age Relevance; *Dialectical Reasoning; *Relative Thinking; Story Content

ABSTRACT

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ED282655

Age-relevance of Content Material on Relativistic and Dialectical Reasoning

Deirdre A. Kramer, Jacqueline Melchior,
and Cheryl Levine
Department of Psychology
Rutgers, The State University of New Jersey
New Brunswick, N.J. 08903

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PS 016633

Paper presented at the Seventeenth Annual Symposium of the Jean Piaget Society, May, 1987, in Philadelphia.

Abstract

The effects of age-relevance of content material on reasoning was systematically studied in 120 adolescents, young adults, middle-aged adults, and older adults. Subjects were presented with either an adolescent, young adult, middle-aged, or older adult interpersonal dilemma and asked a series of structured questions assessing relativistic and dialectical assumptions. On the relativism questions, there was both a main effect of age, with highest overall performance by middle-aged and older adults, and an age by story interaction. On the dialectical questions, there was a significant age by story interaction. Subjects tended to perform most poorly on their same-aged dilemma, and the exact age trend was dependent upon the story, suggesting the role of affective processes in reasoning about emotionally relevant dilemmas.

Recent advances in the adult cognition literature have stressed the adaptive function of cognition, and as a result there is increased interest in social cognitive development in adulthood, with an emphasis on adaptive progression (Kramer, 1986a, 1986b). A growing body of work suggests possible advances in cognitive functioning with age, and explores whether people become more aware of the subjective and dynamic nature of knowledge -- i.e., its relativistic and/or dialectical base. Basseches (1980) found evidence for an age-related progression in dialectical reasoning, but unfortunately his study confounded age, education, and gender, making definitive conclusions difficult (see Kramer & Woodruff, 1986). Kramer & Woodruff (1986) attempted to ameliorate some of the difficulties in the Basseches and other studies, and found an age-related progression in both relativistic and dialectical reasoning, favoring older adults, as opposed to young and middle-aged adults. However, the absence of a difference between the young and middle-aged groups was surprising, and suggested a possible bias in the content material against the middle-aged adults. The present study was undertaken to systematically explore the age-relevance of content material on the relativistic and dialectical reasoning of adolescents, young adults, middle-aged adults, and older adults. It was hypothesized that people would reason at a higher level on their same-age dilemma, yet that an age-related progression would persist nevertheless.

One-hundred and sixty subjects were tested, forty from each of the following four age groups: adolescents (high school juniors and

seniors), young adults (college students), middle-aged adults (ages 40 to 55) and older adults (ages 60 to 75). The young adults were solicited from the introductory psychology subject pool at a large suburban university, the adolescents from a predominantly upper-middle-class suburban high school. The middle-aged and older adults were solicited via newspaper advertisements and were paid a nominal fee for their participation.

Participation lasted approximately one hour. After providing background information, and taking a vocabulary test, subjects were presented with a 1) questionnaire developed by the author to assess their relativistic and dialectical beliefs, 2) a formal reasoning task, and 3) a dilemma about an interpersonal conflict. They were asked a series of structured interview questions about the dilemma, designed to assess relativistic and dialectical assumptions. The order of the questionnaire and the interview were systematically counterbalanced, with the formal reasoning task separating them. Paired comparison t-tests revealed no effects of task order on either the questionnaire or the interview. This paper will focus exclusively on the interview data. The questionnaire data have been presented elsewhere (Kramer, Goldston, & Kahlbaugh, 1987).

To assess whether age interacts with age-relevance of content material, the age-relevance of the dilemmas were systematically varied. Ten subjects in each age group received an adolescent dilemma, ten a young adult dilemma, ten a middle-aged dilemma, and ten an older adult dilemma. The dilemmas had been constructed as a result of responses by 20 individuals from each of those age groups

to an open-ended questionnaire about the kinds of dilemmas which typically confront them. The adolescent dilemma dealt with conflicting friendship loyalties, the young adult dilemma with commitment in an intimate relationship, the middle-age dilemma to marital conflict (over finances), and the old age dilemma to disagreement about an abstract issue. The adolescent dilemma is presented in Appendix A. There was a male (i.e., male protagonist) and a female (i.e., female protagonist) version of each dilemma; males received the male version, females the female version.

The interview contained thirteen questions, nine of which were designed to tap relativistic assumptions and four of which tapped dialectical assumptions. Subjects' responses were assigned a rating of one to six, depending on the level of reasoning demonstrated. These levels are outlined in Table 1. Two trained, independent raters coded the transcripts, and then reached consensus about their disagreements. Inter-rater agreement was well above chance. The coders gave identical ratings 60% of the time, and were within one level of each other 93% of the time. Subjects were assigned a mean rating for the relativism items and a mean rating for the dialectical items. They also received a global stage rating, based on the transcript as a whole.

Two three-way age (4) by gender (2) by story condition (4) analyses of variance were performed, one on the mean relativism and one on the mean dialecticism ratings. There were no sex differences. On the mean relativism ratings, there was a main effect of age, $F(1,127) = 3.60$, $p < .01$, and an age-by-story interaction, $F(9,127) = 1.91$, $p <$

.05. These effects held when educational and vocabulary level were each held constant. Post-hoc analyses revealed that the quadratic component for age was significant, with middle-aged people having the highest relativism ratings, and older people the lowest (see Figure 1). Post-hoc analyses on the age by story interaction revealed significant age differences in stories one and four. On the adolescent story, there was a significant quadratic age trend, with highest performance in middle-aged subjects and lowest in adolescents. On the older adult story there were significant linear and quadratic effects. Adolescents performed the highest, followed by young and middle-aged adults, with the lowest performance by older adults (see Figure 2).

On the mean scores for the dialectical questions, there was no main effect of age, but a significant age-by-story interaction, $F(9,127) = 2.51$, $p < .01$. Post-hoc analyses indicated significant age differences for the young adult and older adult stories. On the young adult story, there was a significant linear trend, with increased performance with age. Middle-aged and older subjects had higher performance than adolescent and young adult subjects. On the older adult story, there were both significant linear and quadratic components, with highest performance by young adults and lowest performance by older adults (see Figure 3).

Thus, the particular age trend is dependent on the content of the material. There were dilemmas that produced higherst performance in every age group, suggesting the difficulty of asserting a universal age trend. Nevertheless, there was a significant main effect of age

on the relativism questions, with peak performance by middle-aged adults. Furthermore, when subjects were classified into a world view level on the basis of a global judgement by the raters, the only two subjects to reach a prototypical dialectical level (level 6) were older adults. When the six-point rating scale was collapsed into three general categories -- formism, relativism, and dialecticism-- and adolescents and young adults are compared with middle-aged and older adults, there were significantly more middle-aged and older adults at the dialectical level than adolescents and young adults, $\chi^2 = 4.17$, $p < .05$ (see Figure 4). Thus, while there are effects of content domain on reasoning, there is also some evidence that relativism and/or dialecticism may increase in incidence with age, although it is by no means attained by all middle-aged and older adults, which may make interpretations of empirical findings more difficult. Furthermore, increased incidence of relativism is most evident among middle-aged subjects; it seems to show a negative realtionship to age thereafter, a finding confirmed by our questionnaire data (Kramer, et al., 1987). Since dialectical reasoning represents a synthesis of formism and relativism -- i.e., finding consistency within plurality -- mature adults seem to reject extreme relativism, some revert to formistic thinking. Others show fluctuation between relativistic and formistic thinking, and yet others successfully reorganize at a dialectical level. It may be best to think in terms of **potential** development in later life, rather than normative development, and to focus on what differentiates those who reorganize at higher levels from those who do not, or who regress.

Interestingly, and as can be seen in Figures 2 and 3, people tended to perform more poorly on the dilemma relevant to their own age groups, either relative to their performance on the other dilemmas or relative to other age groups. This was true for all age groups, but while it was significant for adolescents and older adults on both relativistic and dialectical items, it was only significant on the dialectical items for young adults, and not at all for middle-aged adults.

These findings call into question the idea that relevant materials will yield higher performance. Instead, people tended to perform more poorly on their same-age dilemma. This was particularly true for the adolescents and older adults, who may be more vulnerable to poor performance on this construct: adolescents because relativistic and dialectical reasoning should be a relatively new acquisition and older adults due to their generally poor performance on cognitive tasks (i.e., encompassing the various factors that affect their performance). These findings highlight the importance of motivational and emotional influences on cognitive processing which influence how a person thinks in a given situation and must be incorporated into our models of cognition. Research has pointed to the detrimental effects of emotional arousal and stress on cognitive processing. It leads to a restricted use of available cues and information, an inability to integrate conflicting information, and poorer decision making (Deutsch, 1969; Easterbrook, 1959; Janis & Mann, 1977) There is evidence that suggests regression to lower cognitive levels during emotional arousal (Rosenbach, Crockett, &

Wapner, 1973).

At the same time, other work by the first author and Jeannette Haviland suggess that significant cognitive shifts during adolescence occurs in the context of enhanced emotional arousal (Kramer & Haviland, in preparation), as does work by Oerter (1987). It is important, therefore, to distinguish between short-term situational emotional arousal and ongoing, longterm emotional arousal about significant events. The differential effects of these kinds of arousal will be discussed in Kramer and Haviland (in preparation).

Other work in our lab supports the deleterious effects of emotionally involving materials on reasoning as well. We are developing an objective measurement instrument of relativistic and dialectical beliefs, took the items most relevant to political issues, and constructed a general political questionnaire. We constructed an identical version, except that the words Libya, United States, Khadafy, and Reagan were substituted for the more neutral terms, country and leader. We administered each version to 48 students, and found that those who received the Libyan version had higher formistic, lower relativistic and lower dialectical scores. Thus, in the quest to maintain consistency between one's own values and the actions of one's country, people are less able to integrate multiple perspectives and realize the subjectivity inherent in political decisions. The more similar the content matter is to real-life problems, the greater the opportunity to project one's own defensive emotional reactions on to the task.

As a final point, our results support the findings of domain-

specificity of cognitive functioning in the literature and thus raises questions about the generalizability of cognitive processes across situations. The exact age trend found, as well as the level of reasoning attained, is dependent upon the content material of the task. However, such a finding need not cast doubt on an organismic, structural model of development. The organismic framework stresses functional specificity as a primary assumption (Kramer, 1987). As Basseches (1986) stated, the structural model provides us with criteria for comparing performance across domains and situations, by specifying the formal properties of the performances. Thus done, one can explore how the cognitive processes are constructed with new domains, and what factors influence that development. Furthermore, when prototypical dialectical reasoning is seen -- rare as that is-- it is most likely to be in older adults, but since even here the numbers are scant, such a trend does not always yield significance. An important area of investigation lies in distinguishing those who successfully reorganize at a dialectical level after rejecting relativism from those who do not.

In summary, the results yielded a significant age trend on the relativistic items, with highest performance by middle-aged adults and lowest performance by older adults. There was also an age by story interaction on both relativistic and dialectical items. The particular age trend obtained was dependent upon the age-relevance of the content material. Contrary to our hypothesis, age-relevance of content material inhibited performance on the interview designed to measure relativistic and dialectical reasoning. The older age groups

performed better than the younger ones on young dilemmas and the younger subjects performed better than the older on the old-age dilemma (which makes sense, given that it pertains to conflict over abstract issues, which may appeal to the newly-evolved formal operational reasoner). Such results stress the importance of more inclusive functional models of cognitive processing, which take into consideration motivational and emotional factors in cognitive performance.

References

Basseches, M. (1980). Dialectical schemata: A framework for the empirical study of the development of dialectical thinking. Human Development, 23, 400-421.

Deutsch, M. (1969). Conflicts: productive and destructive. Journal of Social Issues, 25, 7-41.

Easterbrook, J.A. (1959). The effect of emotion on cue utilization and the organization of behavior. Psychological Review, 66, 188-201.

Janis, I.L., & Mann, L. (1977). Decision making: A psychological analysis of conflict, choice, and commitment. New York: The Free Press.

Kramer, D.A. (1986). Social cognition in adulthood: An overview of an emerging perspective. Educational Gerontology, 12, 273-276. (a)

Kramer, D.A. (1986). A life-span view of social cognition. Educational Gerontology, 12, 277-289. (b)

Kramer, D.A. (1987). Toward a unified conception of the lifespan. Unpublished manuscript, Rutgers University.

Kramer, D.A. (in press). Development of an awareness of contradiction across the lifespan and the question of post formal operations. In M.L. Commons, J.D. Sinnott, F.A. Richards, & C. Armon (Eds.), Beyond formal operations II: Comparisons and applications of adolescent and adult developmental models. New York: Praeger.

Kramer, D.A., Goldston, R.B., & Kahlbaugh, P.E. (1987). A measure of people's paradigm beliefs. Paper to be presented at the 58th

Annual Meeting of the Eastern Psychological Association, April, in Arlington, Virginia.

Kramer, D.A., & Haviland, J. (in preparation). Emotion--cognition links in Anne Frank's diary. Paper to be presented at the Third Beyond Formal Operations Symposium at Harvard: Positive Development during Adolescence and Adulthood, Jun, 1987, at Harvard University.

Kramer, D.A., & Woodruff, D.S. (1986). Relativistic and dialectical thought in three adult age groups. Human Development, 29, 280-290.

Oerter, R. (1987). Dialektisches Denden bei Jugendliches und Jungen Ervachsenen. Unpublished manuscript, Ludwig-Maximilians-Universitaet.

Rosenbach, D., Crockett, W.H., & Wapner, S. (1973). Developmental level, emotional involvement, and the resolution of inconsistency in impression formation. Developmental Psychology, 8, 120-130.

Table 1. Six-Level Coding Scheme for Interview Responses

Level	Description of Level
1	Pre-formistic or non-specific responses.
2	Clearcut formistic responses
3	Mixture of formism/mechanism and relativism, or weak relativism
4	Clearcut, abstract, or prototypical example of relativism
5	Mixture of relativism and dialecticism or weak dialecticism
6	Clearcut, prototypical, or abstract example of dialecticism

Age Differences in Relativism
across All Dilemmas

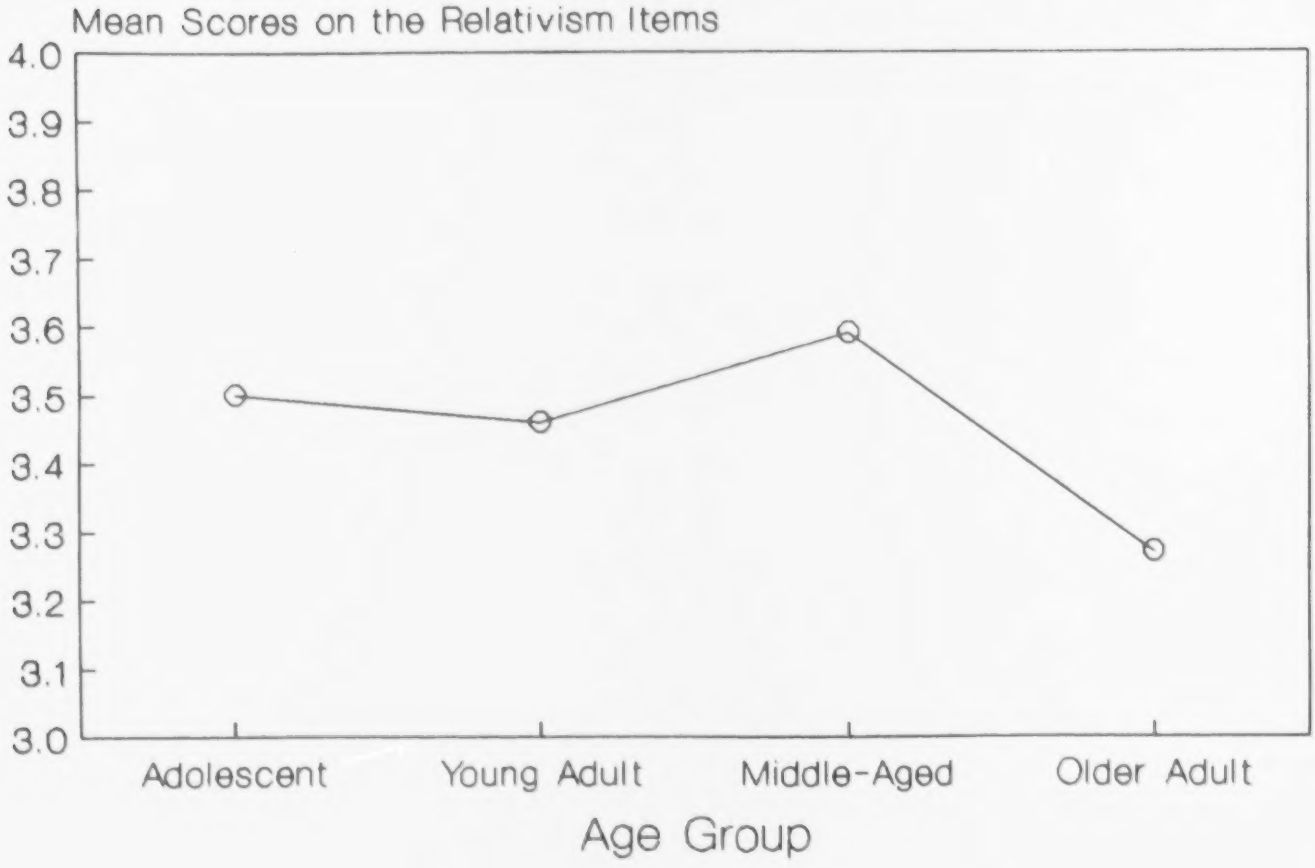
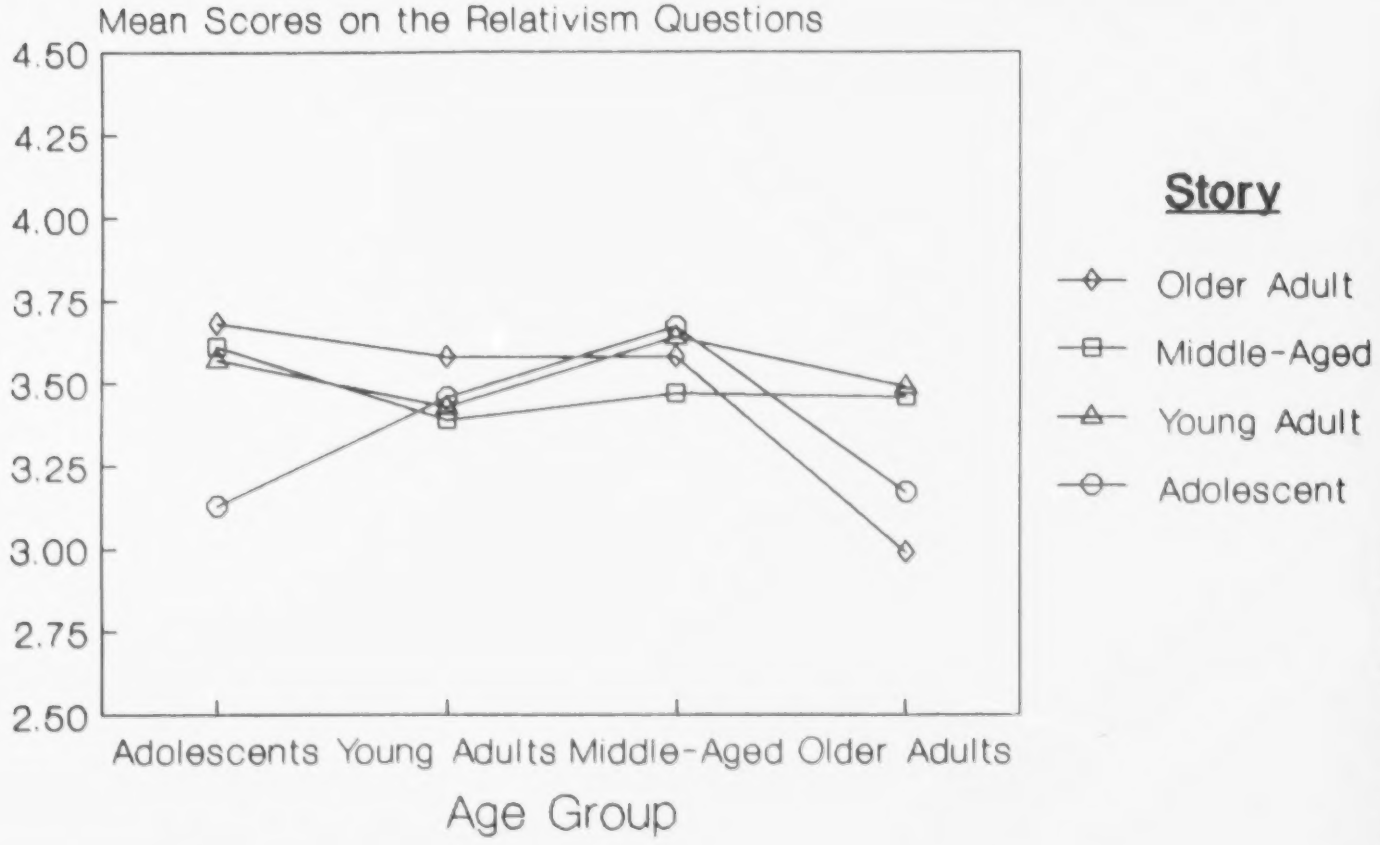


Figure 1

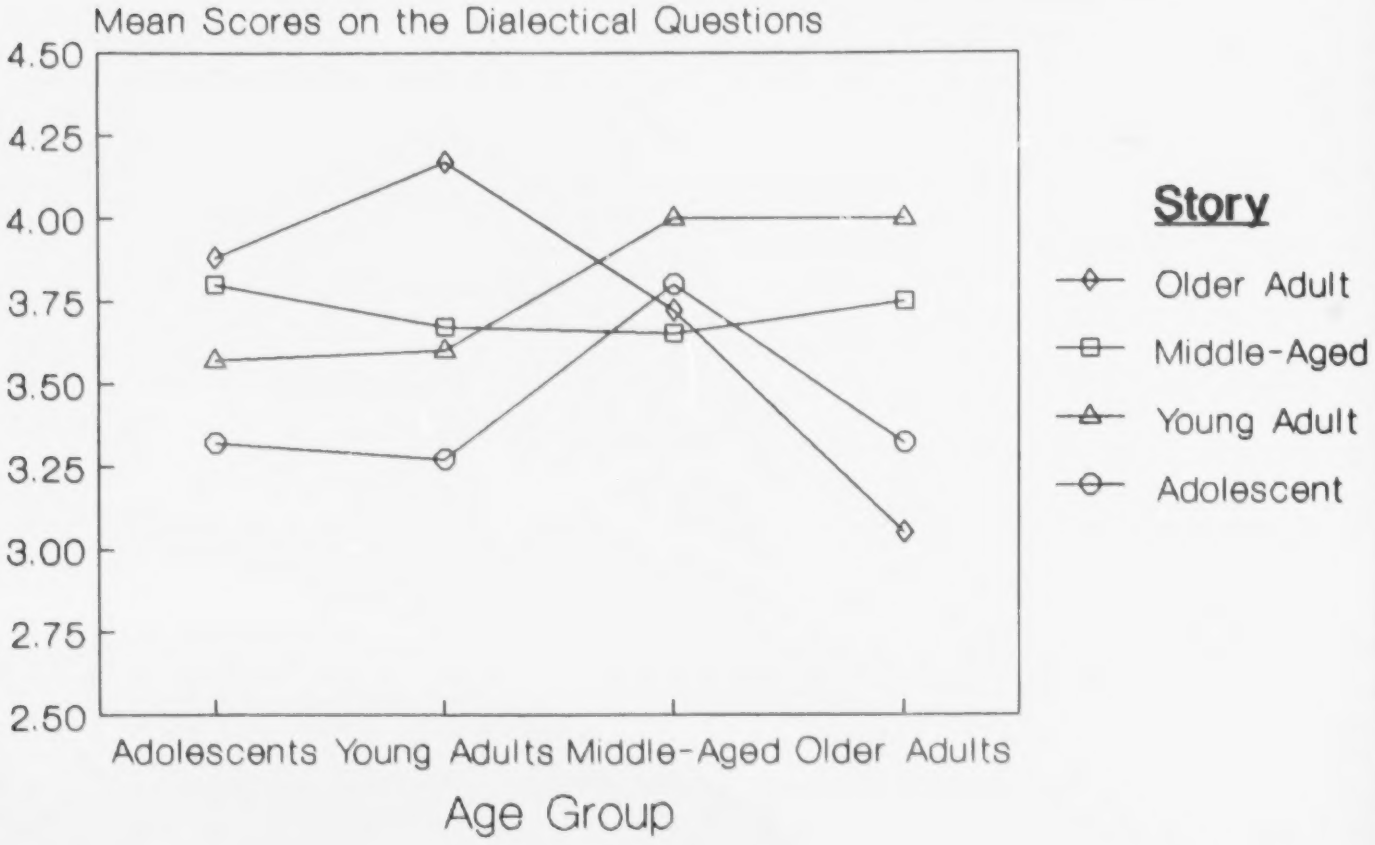
Age Differences in Relativism on each Age-Relevant Dilemma



Interview Method

Figure 2

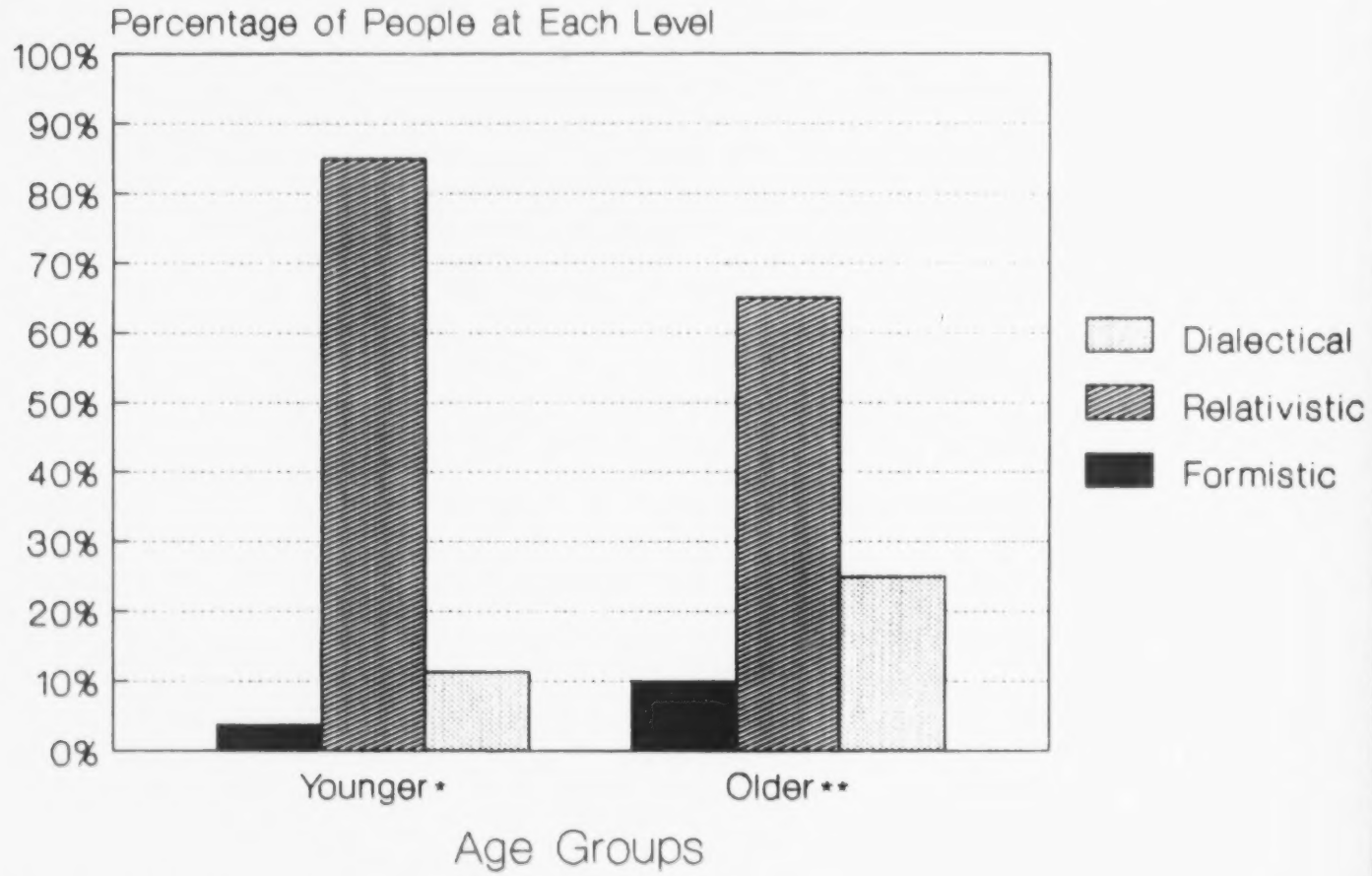
Age Differences in Dialecticism
on each Age-Relevant Dilemma



Interview Method

Figure 3

Number of Younger versus Older People at Each of the Three Levels of Reasoning



• adolescent & college, •• m.aged & old

Figure 4

Appendix A

Adolescent Dilemma

Female version

Cindy is confused. She just had a fight with her friend Debbie. Debbie doesn't like Cindy's friend Jennifer, whom Cindy always eats with in the lunchroom at their high school. Lately, Debbie has been asking Cindy to eat with her instead. When Cindy says no, Debbie's feelings are hurt and she gets mad. This is what their fight was about. Debbie told Cindy that things have to change, but Cindy doesn't want to stop eating lunch with Jennifer, and knows Jennifer would get upset if she did. She can't eat with both Jennifer and Debbie, because Debbie doesn't like Jennifer. Debbie doesn't know what to do.

Male Version

Eric is confused. He just had a fight with his friend David. David doesn't like Eric's friend Joe, whom Cindy always eats with in the lunchroom at their high school. Lately, David has been asking Eric to eat with him instead. When Eric says no, David's feelings are hurt and he gets mad. This is what their fight was about. David told Eric that things have to change, but Eric doesn't want to stop eating lunch with Joe. and knows Joe would get upset if he did. He can't eat with both Joe and David, because David doesn't like Joe. Eric doesn't know what to do.